

ABSTRACT FORM FOR ALL GSA MEETINGS IN 1988

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U. S. Department of Energy

Idaho Operations Office

No 3558

2

MIDDLE AND LATE EOCENE PALEOENVIRONMENTS FROM OUTCROPS NEAR THE SAVANNAH RIVER PLANT

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Eocene outcrops near the Savannah River Plant are still poorly understood since comprehensive lithostratigraphic frameworks have not long been available. The McBean Formation (Orangeburg Group; middle Eocene) calcareous units are best interpreted as bioclastic carbonate shoals similar to those occurring today off the central Atlantic coast of Florida. Shell Bluff (Burke Co., GA) represents the transection of one shoal system by the Savannah River. With late middle Eocene sea retreat Crassostrea gigantissima (Finch) communities first appeared in shoal-protected settings and later became prominent, so marking the base of the Barnwell Group (?upper/?middle-upper Eocene). Near Shell Bluff these oyster beds are capped by and commingled with marine mollusc-rich sands, including reworked materials.

These calcareous units were dissected at least twice before deposition of the "uplands unit" of late Paleogene age, and younger C. gigantissima communities do occur in scoured settings. Local relief in Barnwell unit bases is significant (6+ m) and elevations cannot be used with assurance for bed correlation. Further, scour and reworking decrease the value of datum/zonal fossils in age determination within the Barnwell Group. Such problems are to be expected in the mosaic of coastal zone environments recorded in the strata of this area.

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